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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/214,708	01/11/1999	MITSUSHI ITANO	XI/P6217USO	8306

881 7590 11/21/2002
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EXAMINER

WINTER, GENTLE E

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 11/21/2002

27

Please find below and/or attached an Office communication concerning this application or proceeding.

27

Office Action Summary

AS-27

Application No.

09/214,708

Applicant(s)

ITANO, MITSUSHI

Examiner

Gentle E. Winter

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 11, 12, 14-16, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 4,581,101 to Senoue et al. disclosing a “an etching gas which is capable of removing the etching residue or polymer or of efficiently preventing the formation thereof”. See e.g. column 1, line 33 *et seq.* The application of the gas is further disclosed to be in a CVD chamber see e.g. column 4, line 53 *et seq.* the addition of hexafluoropropylene oxide see e.g. column 4, line 59 and also see e.g. column 3, line 38 (disclosing that the addition of chlorine is optional, the chlorine having the effect of increasing selectivity and speed). Further the addition of oxygen, hydrogen, and nitrogen are taught as additional additives for use with the hexafluoropropylene oxide. See e.g. column 4, line 7 *et seq.* and 56-60. The invention relates to a dry etching process for forming fine patterns for semiconductor integrated circuits see e.g. column 1, line 1 *et seq.*

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Senoue et al. as set forth above and 4,260,649 to Dension et al. Each and every limitation of claims 13 and 17 are disclosed in Senoue et al. as set forth above, except that Senoue et al. fails to explicitly disclose the gas hexafluoroacetone and its use as an etchant, however it is believed to be subsumed within the fluoro gas and process gases alluded to in Senoue et al. In the interest of compact prosecution, and assuming that Applicant takes a contrary position, the Dension et al. reference is provided for the missing element. Examples VI discloses that a hexafluoroacetone gas, used in conjunction with oxygen may be used to strip photoresist. Thus Dension et al. teaches using the chemical of claim 17 for the purpose of claim 17 (i.e. removal of unwanted material from the plasma CVD chamber). The artisan would have made the combination in an attempt to oxidize photo resist and remove same, as explicitly set forth in Dension et al. See e.g. column 4, line 33 *et seq.*

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
3. Japanese patent 06163476A discloses a dry etch method, wherein hexafluoroacetone is used as an etching gas to etch away the SiO₂ interlayer insulating film. See e.g. column 6, paragraph 29.

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4. United States Patent No. would have been used as a reference except that the data appear to be later than the priority date of the instant application.

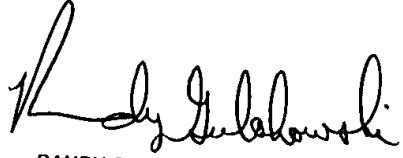
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gentle E. Winter whose telephone number is (703) 305-3403. The examiner can normally be reached on Monday-Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (703) 308-4333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications. The direct fax number for this examiner is (703) 746-7746.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Gentle E. Winter
Examiner
Art Unit 1746

November 16, 2002


RANDY GULAKOWSKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700